Medical–Biological
Research & Technologies

V-1 plus
Personal vortex for tubes

Operating Manual
Certificate

for version
V.1AW

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1. Safety Precautions

The following symbol means:

Caution! Make sure you have fully read and understood the present Manual before using the equipment. Please pay special attention to sections marked by this symbol.

GENERAL SAFETY

- Use only as specified in the Operating Manual provided.
- The unit should be saved from shocks or falling.
- After transportation or storage keep the unit under room temperature for 2-3hrs before connecting it to the electric circuit.
- Use only cleaning and decontamination methods recommended by the manufacturer.
- Do not make modifications to the design of the unit.

ELECTRICAL SAFETY

- Connect only to the external power supply unit with voltage corresponding to that on the serial number label.
- Use only the external power supply unit provided with this product.
- Ensure that the external power supply is easily accessible during use.
- Disconnect the unit from the electric circuit before moving.
- Disconnect the external power supply unit from power socket to turn off the unit.
- If liquid penetrates into the unit, disconnect it from the external power supply unit and have it checked by a repair and maintenance technician.

DURING OPERATION

- Use only the tubes smaller or equal to 28.5 mm in diameter.
- Do not stop the vortex head rotation with a hand.
- Do not operate the unit in environments with aggressive or explosive chemical mixtures.

- Do not operate the unit if it is faulty or has been installed incorrectly.
- Do not start operation at maximum speed.
- Do not use outside laboratory rooms.

BIOLOGICAL SAFETY

- It is the user's responsibility to carry out appropriate decontamination if hazardous material is spilt on or penetrates into the equipment.

2. General Information

V-1 plus Personal vortex for tubes is designed for mixing substances in tubes using the eccentric mechanism. The vortex can be used in a variety of applications including general test tube mixing, tissue samples mixing, cell's suspensions vortexing, chemical reagents mixing, etc.

The vortex is equipped with 20 mm diameter single fluoroplastic mixing cup for mixing one tube at a time.

V-1 plus is intended for two operations:

- continuous mixing;

- impulse mixing (activated by touching the mixing cup with a test tube).

V-1 plus Personal vortex for tubes operates at variable speeds from 750 to 3000 rpm providing different mixing intensity (from gentle shaking to intensive vortexing).

3. Getting started

3.1. Unpacking

Remove packing materials carefully and retain them for future shipment or storage of the unit.

Examine the unit carefully for any damage incurred during transit. The warranty does not cover in-transit damage.

3.2. Complete set. Package contents:

V-1 plus Personal vortex for tubes .....1 pce.

external power supply unit .....1 pce.

Operating Manual; Certificate .....1 copy

3.3. Set up

place the unit on the working area;

plug the external power supply unit into the 12 V socket at the rear side of the unit.

4. Operation

4.1. Connect the external power supply to electric circuit.

4.2. Continuous operation mode – **CS**

4.2.1. Turn the **TS/CS** switch (fig.1/2) into **CS** position.

4.2.2. Set the required speed using the **Speed** knob (fig.1/3).

4.2.3. Gently holding a tube with fingers at its upper part dip the tube's lower part into the conic deepening of the vortex head (Fig.2/1).

4.2.4. Control the intensity of mixing by varying pressure of a tube to the vortex head.

4.2.5. After finishing the operation turn the **TS/CS** switch into **TS** position.

4.3. Touch operation mode – **TS**

4.3.1. Turn the **TS/CS** switch (fig.1/2) into **TS** position.

4.3.2. Gently holding a tube with fingers at its upper part press the tube's lower part to the vortex head cavity bottom (Fig.1/1). Vortex will be activated when pressing the mixing cup with a test tube.

4.3.3. Set the required speed (desired mixing level) using the **Speed** knob (fig. 1/3).

4.3.4. Control the intensity by varying pressure of a tube to the vortex head (Fig.1/1).

4.4. After finishing the operation disconnect the external power supply unit from electric circuit.

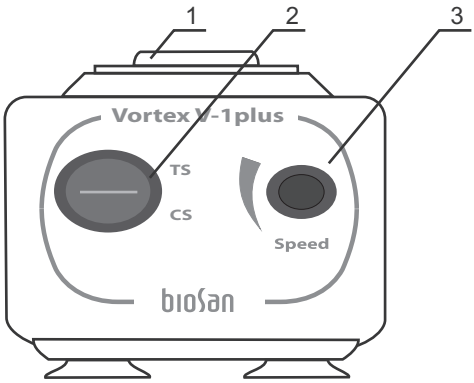

Fig.1 V-1 plus personal vortex

5. Specifications

The unit is designed for operation in cold rooms, incubators and closed laboratory rooms at ambient temperature from +4°C to +40°C and maximum relative humidity 80% for temperatures up to 31°C decreasing linearly to 50% relative humidity at 40°C.

Speed control range .....750–3000 rpm (max. speed depends on loading)

Maximum continuous operation time .....8 hrs

Mixing module for tubes .....from 1.5 to 50 ml

Maximum mixing volume .....30 ml

Orbit.....4 mm

Dimensions .....90x150x80 mm

Input current/power consumption .....12 V, 320 mA / 3.8 W

External power supply unit ..... input AC 100–240 V 50/60 Hz, output DC 12 V

Weight* .....0.8 kg

* Accurate within ±10%.

Biosan is committed to a continuous programme of improvement and reserves the right to alter design and specifications of the equipment without additional notice.

6. Maintenance

6.1. If the unit requires maintenance, disconnect the unit from the electric circuit and contact Biosan or your local Biosan representative.

6.2. All maintenance and repair operations must be performed only by qualified and specially trained personnel.

6.3. Standard ethanol (75%) or other cleaning agents recommended for cleaning of laboratory equipment can be used for cleaning and disinfection of the unit.

7. Warranty and Claims

7.1. The Manufacturer guarantees the compliance of the unit with the requirements of Specifications, provided the Customer follows the operation, storage and transportation instructions.

7.2. The warranted service life of the unit from the date of its delivery to the Customer is 12 months. Contact your local distributor to check availability of extended warranty.

7.3. If any manufacturing defects are discovered by the Customer, an unsatisfactory equipment claim shall be compiled, certified and sent to the local distributor address. Please visit www.biosan.lv, Technical support section to obtain the claim form.

7.4. The following information will be required in the event that warranty or post-warranty service comes necessary. Complete the table below and retain for your records.

Model	V-1 plus Personal vortex for tubes
Serial number	
Date of sale	

8. Declaration of Conformity

Declaration of Conformity

Equipment name:	**V-1 plus**
Type of equipment:	Personal vortex for tubes
Directive:	EMC Directive 2004/108/EC Low Voltage Directive 2006/95/EC RoHS 2011/65/EC WEEE 2002/96/EC & 2012/19/EU
Manufacturer:	SIA BIOSAN Ratsupites 7, build.2, Riga, LV-1067, Latvia
Applied Standards:	**EN 61326-1:** Electrical equipment for measurement, control and laboratory use EMC requirements. General requirements **EN 61010-1:** Safety requirements for electrical equipment for measurement, control and laboratory use. General requirements **EN 61010-2-051:** Particular requirements for laboratory equipment for mixing and stirring

We declare that this product conforms to the requirements of the above Directive(s)

Signature
Svetlana Bankovska
Managing director
12.06.2013
Date

Signature
Aleksandr Shevchik
Engineer of R&D
12.06.2013
Date

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Version 1.04 - October 2013